CITY OF CARLSBAD
Fiscal Year 2012-13
Growth Management Plan Monitoring Report

July 1, 2012 through June 30, 2013

Carlsbad City Council

Matt Hall, Mayor
Mark Packard
Keith Blackburn
Farrah Golshan Douglas
Lorraine Wood

Report prepared in cooperation with the following departments:

Community and Economic Development
Fire
Parks & Recreation
Library and Cultural Arts
Transportation
Utilities
Carlsbad Municipal Water District

Introduction

The purpose of this report is to provide information regarding the status of the Carlsbad Growth Management Plan (GMP) for the calendar year covering July 1, 2012 – June 30, 2013, and to verify that the plan is continuing to accomplish its stated objectives. The primary objectives of the GMP are to ensure that adequate public facilities are provided concurrent with growth, and to assure compliance with the ultimate dwelling unit limitations that were established by Proposition E, which was passed by voters in 1986.

Performance Standards

Proposition E established broad guidelines for determining adequacy of public facilities. These guidelines are further defined in the Citywide Facilities and Improvements Plan (Sept. 16, 1986) by means of specific performance standards for each of the eleven public facilities. These public facilities, their performance standards, current status, and anticipated adequacy at buildout are outlined in Table 1 and Table 2, as follows:

Table 1
Performance Standards

Public Facility	Performance Standard	More Information on Page
City Administrative Facilities	1,500 sq. ft. per 1,000 population must be scheduled for construction within a five-year period or prior to construction of 6,250 dwelling units, beginning at the time the need is first identified.	12
Library	800 sq. ft. (of library space) per 1,000 population must be scheduled for construction within a five-year period or prior to construction of 6,250 dwelling units, beginning at the time the need is first identified.	13
Wastewater Treatment Capacity	Sewer plant capacity is adequate for at least a five-year period.	14
Parks	3.0 acres of Community Park or Special Use Area per 1,000 population within the Park District must be scheduled for construction within a five year period, or prior to construction of 1,562 dwelling units within the Park District beginning at the time the need is first identified.	15
Drainage	Drainage facilities must be provided as required by the City concurrent with development.	17
Circulation	No road segment or intersection in the Local Facility Management Zone (LFMZ) nor any road segment or intersection out of the zone which is impacted by development in the zone shall be projected to exceed a service level C during off-peak hours, nor service level D during peak hours. Impacted means where 20% or more of the traffic generated by the local facility management zone will use the road segment or intersection.	19

Table 1, Continued
Performance Standards

Public Facility	Performance Standard	More Information on Page
Fire	The number of dwelling units outside a five-minute "travel time" from the nearest fire station shall not exceed 1,500 units.	22
Open Space	Fifteen percent of the total land area in the Local Facility Management Zone (LFMZ) exclusive of environmentally constrained non-developable land must be set aside for permanent open space and must be available concurrent with development.	24
Schools	School capacity to meet projected enrollment within the Local Facility Management Zone (LFMZ) as determined by the appropriate school district must be provided prior to projected occupancy.	25
Sewer Collection System	Trunk-line capacity to meet demand, as determined by the appropriate sewer districts, must be provided concurrent with development.	26
Water Distribution System	Line capacity to meet demand as determined by the appropriate water district must be provided concurrent with development. A minimum of 10-day average storage capacity must be provided prior to any development.	28

Table 2
Facility Adequacy Status

Public Facility	FY 2012-13 Adequacy Status (Meets performance standard?)	Buildout Adequacy Status (Meets performance standard?)
City Administrative Facilities	Yes	Yes
Library	Yes	Yes
Wastewater Treatment Capacity	Yes	Yes
Parks	Yes	Additional facilities to be provided*
Drainage	Yes	Additional facilities to be provided*
Circulation	Yes	Additional facilities to be provided*
Fire	Yes	Yes
Open Space	Yes	Additional facilities to be provided*
Schools	Yes	Yes
Sewer Collection System	Yes	Additional facilities to be provided*
Water Distribution System	Yes	Additional facilities to be provided*

* For additional information, please see the expanded discussion and an analysis on the adequacy of each public facility beginning on page 12.

What Happens if Facilities Do Not Meet the Performance Standard?

The GMP requires development activity to stop (in a specific area of the city or citywide) if a performance standard is not being met, as described below:

- Administrative Facilities, Library, and Wastewater Treatment Capacity are facilities that serve the entire City. Their adequacy in meeting the performance standard is analyzed by considering the cumulative impact of citywide development. The failure of any one of these facilities to meet the adopted performance standard would affect the City as a whole. In that event, all development in the City would be halted until the deficiency is corrected.

- Parks are analyzed on a quadrant basis. This means that if the standard is not being met in the quadrant, development is halted for all Local Facility Management Zones (LFMZs, see description below) in the quadrant.

- Fire facilities are analyzed on the basis of fire station districts which can comprise multiple LFMZs, and if the standard is not met for a district, then development would be halted in that district.

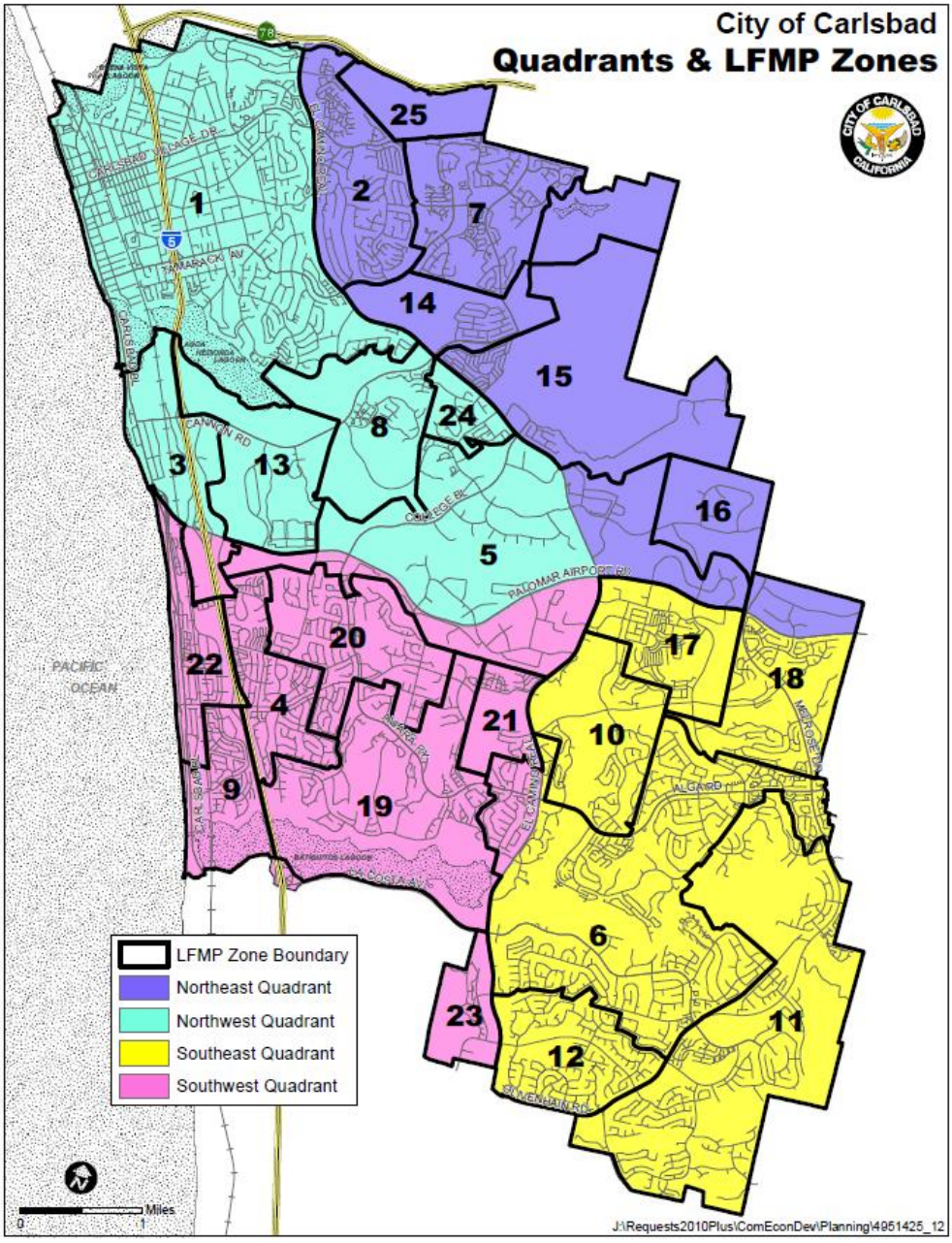
- The remaining facilities (Drainage, Circulation, Open Space, Schools, Sewer Collection System, and Water Distribution System) are analyzed on an LFMZ basis. If one of these facilities falls below the performance standard in a given LFMZ, development in that LFMZ would stop and other zones would not be affected if they are continuing to meet all performance standards.

Local Facility Management Zone Plans

The Citywide Facilities and Improvements Plan divided the City into twenty-five Local Facilities Management Zones (LFMZ). Each LFMZ is required to have an adopted Local Facilities Management Plan (LFMP) prior to any development in the LFMZ. Consistent with the GMP, the LFMP must do the following: describe how the LFMZ will be developed, how compliance with the Growth Management standards will be achieved, how the necessary public facilities will be provided, and what financing mechanisms will be used for the facilities. As of the end of FY 2012-13, all twenty-five LFMZs have an adopted LFMP. The LFMP for Zone 25, the final LFMP to be adopted, was approved in April 2013 by the City Council along with the Quarry Creek Master Plan.

Please see Figure 1 for the general boundaries and locations of the LFMZs.

Figure 1



Population as a Measurement for Facility Performance Standards

As indicated in Table 1, above, the performance standards for City Administrative facilities, Library facilities, and Parks are stated in terms of population. The demand for these facilities is based on each new dwelling unit built and the estimated number of new residents it adds to the city, which is determined using the average number of persons per dwelling unit. Utilizing data from the 2010 Federal Census, the average number of persons per dwelling unit in Carlsbad is 2.358 persons.

As of June 30, 2013, the City's population is estimated to be 107,704, which is calculated by multiplying 2.358 persons per dwelling unit by the number of dwelling units in Carlsbad, which is 45,676 (Carlsbad Development Monitoring Report for June 2013).

As part of the monitoring process, the persons per household number can be adjusted in the future when updated Federal Census data is available. It should be noted that the above population estimates are for facility planning purposes only and not an official population estimate for Carlsbad.

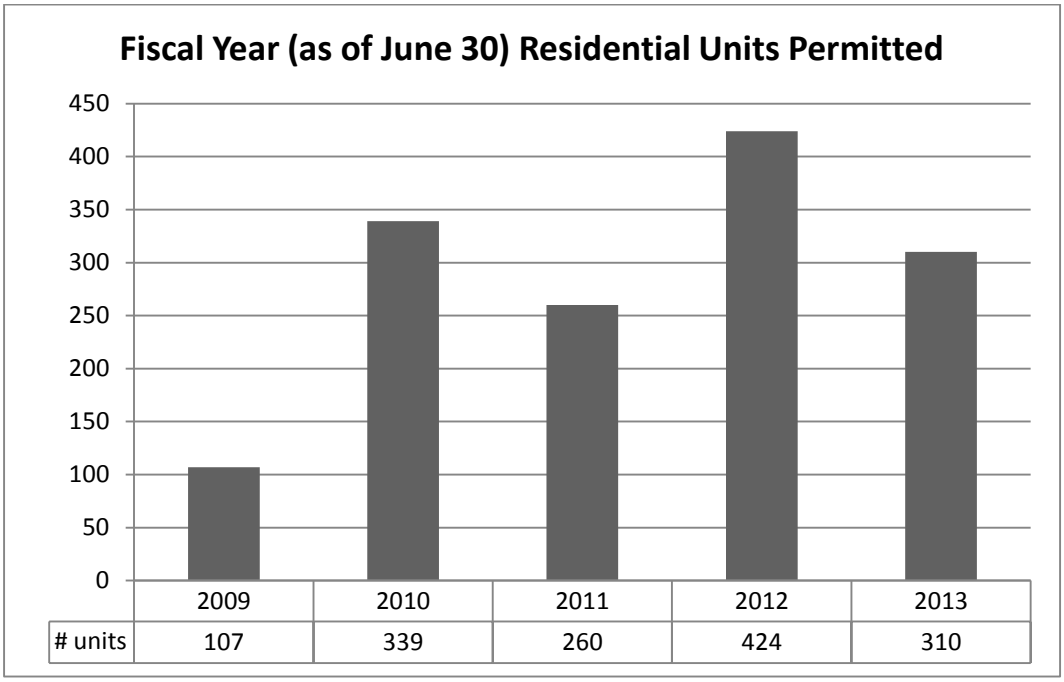
Residential Development Activity

Building permits for 310 new dwelling units were issued during the FY 2012-13. Table 3 provides a breakdown by LFMZ, excluding the zones that had no development activity. Figure 2 shows the recent five year trend for the number of residential units for which building permits were issued.

Table 3

FY 2012-2013 Residential Development			
By LFMZ		**By Quadrant**	
Zone	Dwelling Units	Quadrant	Dwelling Units
1	18	NW	18
2	1		
4	5	NE	114
6	20		
11	59	SW	97
14	113		
17	2	SE	81
19	6		
20	11		
21	75		
Total	***310***	***Total***	***310***

Figure 2



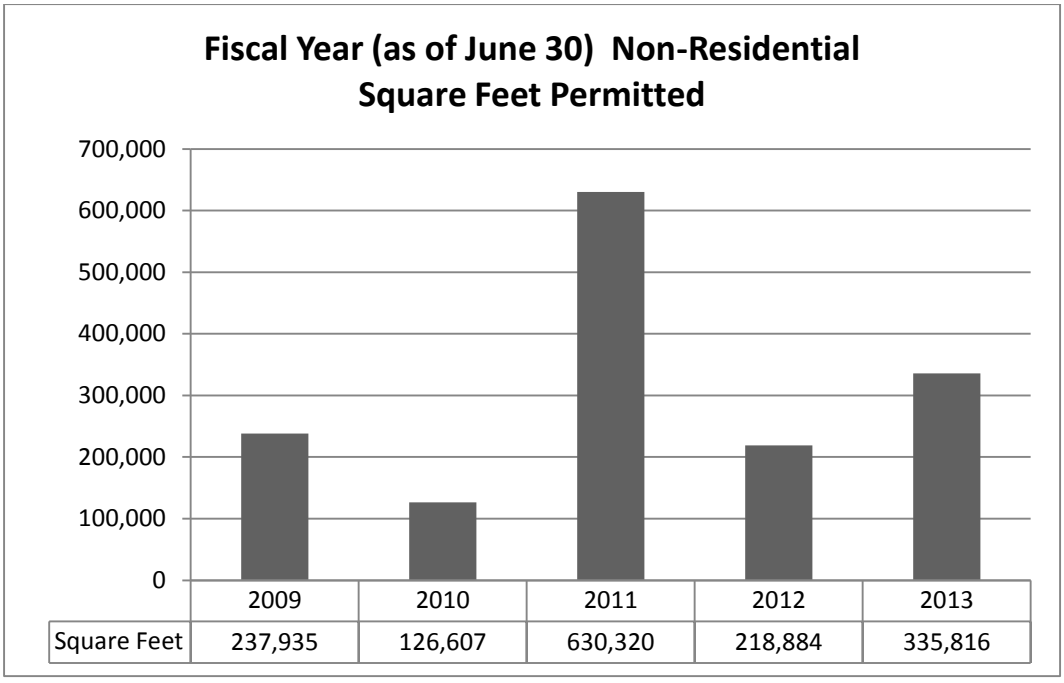
Non-Residential Development Activity

Building permits for 335,816 square feet of new non-residential construction were issued during FY 2012-13, comprising both commercial and industrial development. Table 4 provides a breakdown by LFMZ, excluding the zones that had no development activity. Figure 3 shows the recent five year trend for the square footage of non-residential construction for which building permits were issued.

Table 4

FY 2012-2013 Non-Residential Development					
By LFMZ			**By Quadrant**		
Zone	Square Feet Permitted		Quadrant	Square Feet Permitted	
	Commercial	*Industrial*		*Commercial*	*Industrial*
1	43,876	0	NW	99,638	2,880
3	0	2,880			
5	185,459	7,300	NE	23,126	0
7	9,316	0			
10	17,414	0	SW	185,458	7,300
13	55,762	0			
21	466	0	SE	17,414	0
22	13,343	0			
Subtotal	325,636	10,180	Subtotal	325,636	10,180
Total	***335,816***		***Total***	***335,816***	

Figure 3

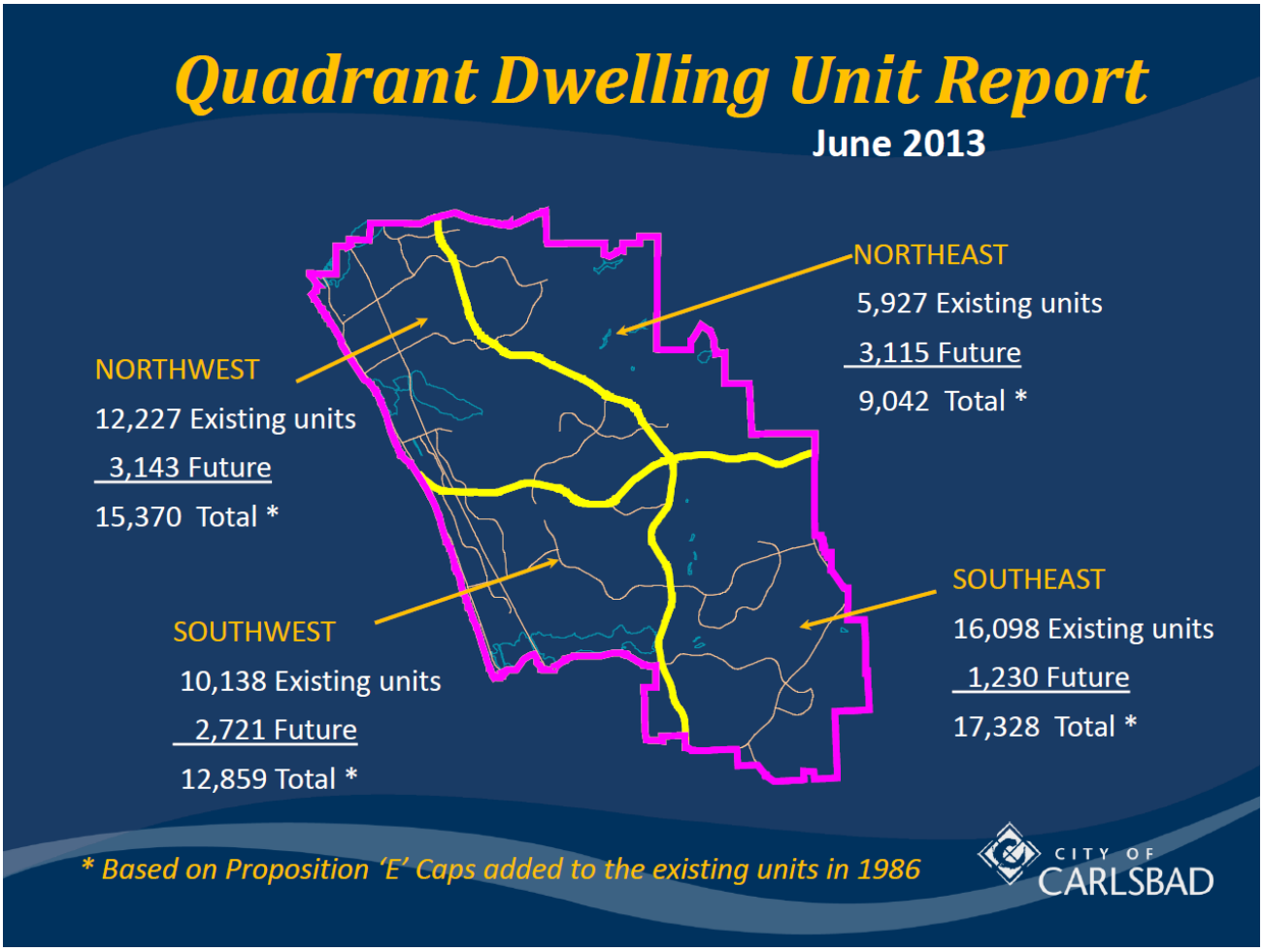


Proposition E Compliance

The purpose of this part of the report is to demonstrate that the ultimate dwelling unit caps stated in Proposition E will not be exceeded. Proposition E states "the maximum number of residential dwelling units to be constructed or approved in the City after November 4, 1986 is as follows: Northwest Quadrant 5,844; Northeast Quadrant 6,166; Southwest Quadrant 10,667; Southeast Quadrant 10,801." This resulted in dwelling unit caps as shown in Figure 4 (see the totals for each quadrant below). All quadrants are in compliance with the dwelling unit caps established by Proposition E for FY 2012-13.

Pursuant to state law and city regulations, second dwelling units and commercial living units are not counted as dwellings in the Quadrant Dwelling Unit Report (Figure 4) for the purposes of Growth Management compliance with the Proposition E caps. However, second dwelling units and certain commercial living units are included in estimating population to ensure that all units that may house population are incorporated into facilities planning.

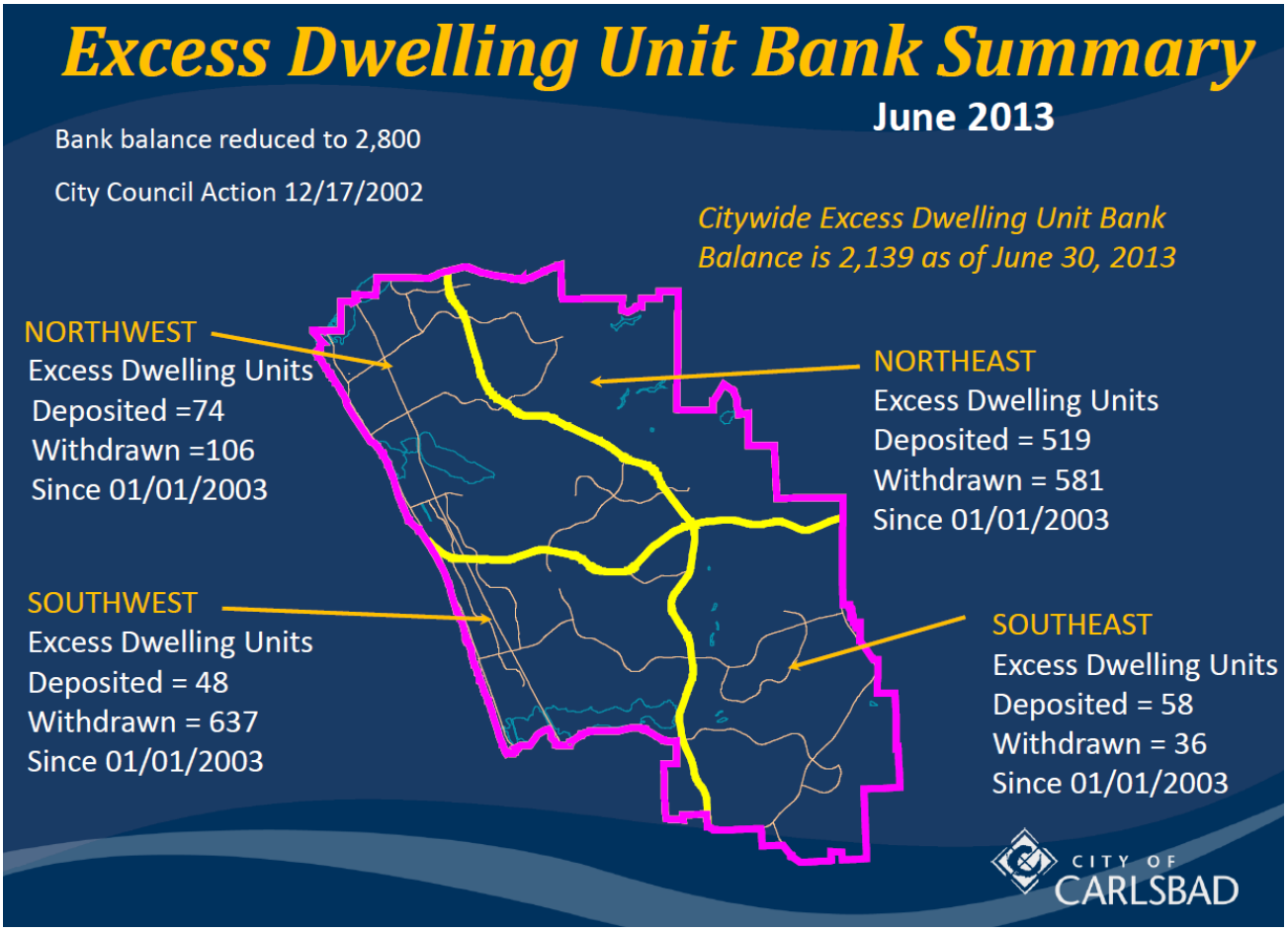
Figure 4



Council Policy Statement 43 (Proposition E "Excess Dwelling" Unit Bank) established a dwelling unit bank concept in order to enable the City to grant density increases for certain types of residential projects, such as affordable housing projects, while assuring that the Proposition E caps are not exceeded. For projects that develop below the allowable density under Growth Management, these "excess" dwelling units are placed into the Excess Dwelling Unit Bank (Bank), and those units are then available to allow other projects to exceed the allowable density.

On December 17, 2002, the City Council adopted Resolution No. 2002-350, which amended Council Policy Statement 43 by reducing the accumulated number of excess units to 2,800. Excess units may be allocated from the Bank to any quadrant based on the criteria in Council Policy Statement 43, so long as the citywide dwelling unit cap or individual quadrant caps are not exceeded. Please see Figure 5 for the Excess Dwelling Unit Bank status at the end of the FY 2012-13.

Figure 5



Buildout Analysis

Under Growth Management, the maximum number of dwelling units that could be constructed is 54,599; however, as a result of the Excess Dwelling Unit Bank reduction in 2002, the potential number of dwelling units at buildout is estimated to be 51,899 units, which is less than what Growth Management allows.

On February 26, 2010, the San Diego Association of Governments (SANDAG) adopted its 2050 Regional Growth Forecast. Along with all other cities in San Diego County, the forecast analyzed the development yield in Carlsbad from (1) available vacant land and (2) areas of potential redevelopment. According to the 2050 Regional Growth Forecast, the maximum number of dwelling units in Carlsbad is estimated to be 50,566 in the year 2050. Utilizing this forecast, plus incorporating adjustments to reflect the net capacity added by recent approvals of Quarry Creek, Barrio amendments and the Encinas Creek Apartments, the projected dwelling units and population for Carlsbad at buildout is shown in Table 5 below:

Table 5
2050 Dwelling Unit and Population Projections

Quadrant	Dwelling Units *	Population **
NW	14,931	35,207
NE	8,312	19,600
SW	11,209	26,431
SE	16,755	39,508
Citywide Total	51,207	120,746

* SANDAG 2050 Regional Growth Forecast, plus adjustments made to reflect net capacity added by Quarry Creek, Barrio amendments and Encinas Creek Apts.
** Calculated using persons per dwelling unit size of 2.358 (based on Census 2010 data)

Public Facility Financing

In 1991, the City of Carlsbad established Community Facilities District No. 1 (CFD) to provide financing for a number of public facilities of citywide importance that are needed to meet the requirements of the GMP, including various road and intersection improvements, and the Dove Library. As LFMZ plans are adopted, they are conditioned to annex into the CFD at the time the first discretionary permit grants an entitlement to develop in the LFMZ. This ensures financing for public facilities that can accommodate future growth consistent with the criteria of Growth Management.

Envision Carlsbad (General Plan Update)

In September 2012, the City Council accepted a Preferred Plan that proposes to change land use designations on various properties throughout the city; those changes include increasing the number of residential units that can be built on some sites. The Preferred Plan is being utilized for analysis purposes as part of the General Plan update. In November 2013, the City Council directed that three additional sites be studied for potential land use designation changes. Any increase in residential capacity will adhere to the Proposition E dwelling unit limitations and adequacy of facilities will be analyzed as part of the General Plan update. The analysis in this report is based on the current adopted General Plan and facilities master plans.

Status of the Facilities

Beginning on page 12 is a discussion of the adequacy of each of the eleven public facilities addressed in Carlsbad's GMP.

CITY ADMINISTRATIVE FACILITIES

A. Performance Standard

1,500 sq. ft. per 1,000 population must be scheduled for construction within a five-year period or prior to construction of 6,250 dwelling units, beginning at the time the need is first identified.

B. FY 2011-13 Facility Adequacy Analysis

Based on the estimated June 30, 2013 population estimate of 107,704, the current demand for administrative facilities is **161,556** square feet. To date, City Administrative Facilities exceeds the performance standard. The existing inventory of City and Carlsbad Municipal Water District buildings (leased and owned) occupied for administrative services includes the following:

Facility	Address	Sq. Ft.
City Administration	1635 Faraday Avenue	68,000
City Council Chambers	1200 Carlsbad Village Dr	2,500
City Hall Complex	1200 Carlsbad Village Dr	13,500
City Yard	405 Oak Avenue	8,249
City Yard Modular Building	405 Oak Avenue	1,800
Senior Center	799 Pine Street	6,750
Parks Administration	1166 Carlsbad Village Dr	504
Parks Modular/Break Room	1166 Carlsbad Village Dr	2,000
Safety Center	2560 Orion Way	64,000
FR Training Facility	2560 Orion Way	18,112
Fleet Yard	2480 Impala Drive	10,358
Water District	5950 El Camino Real	18,000
Water District Modular	5950 El Camino Real	696
Total		**214,469**

C. Buildout Facility Adequacy Analysis

Based on the 2050 projected buildout population of 120,746, the demand for city administrative facilities will be **181,119** square feet. The existing **214,469** square feet of administrative facilities exceeds the Growth Management performance standard at buildout.

LIBRARY FACILITIES

A. Performance Standard

800 sq. ft. (of library space) per 1,000 population must be scheduled for construction within a five-year period or prior to construction of 6,250 dwelling units, beginning at the time the need is first identified.

Library space (leased/owned, public/non-public) is used as a standard library measurement of customer use and satisfaction and includes collection space, seating, meeting rooms, staff areas, technology, and other public facility needs. The performance standard, stated above, was originally developed based on surveys of other libraries of comparable size and based on related standards (such as volumes per capita) set by the American Library Association.

B. FY 2012-13 Inventory and Adequacy of Facilities

The current inventory of library facilities is as follows:

Owned:

Dove Library	64,000 s.f.
Cole Library	24,352 s.f.
Learning Center	11,393 s.f.
TOTAL	99,745 s.f.

Based on the June 30, 2013 population estimate of 107,704, the growth management standard requires **86,163** s.f. of public library space. The Library adequately meets the growth management standard with current facilities (**99,745** s.f.).

C. Facility Adequacy at Buildout

Based on the 2050 projected buildout population of 120,746, the demand for library facilities will be **96,597** s.f. The existing **99,745** square feet of library facilities exceeds the Growth Management standard at buildout.

It is possible that the City's population will not trigger the Growth Management Plan requirement to add additional space to the Cole Library before the city reaches buildout. However, structural conditions may require the Cole Library to be reconstructed prior to buildout.

A 1998 feasibility study conducted at the Cole Library indicated several structural and building code issues to be addressed within a reasonable time, including such items as Americans with Disabilities Act (ADA), mechanical, and electrical requirements. To date, the HVAC has been upgraded and some ADA improvements have been completed. The City has scheduled major maintenance and renovation for both the Cole and Dove facilities in 2014/15 that will address current ADA issues and allow delivery of modern library services and technology. Complete replacement of the Cole facility is included in the Capital Improvement Program budget between the years 2020 and buildout.

WASTEWATER TREATMENT CAPACITY

A. Performance Standard

Sewer plant capacity is adequate for at least a five-year period.

B. FY 2012-13 Facility Adequacy Analysis

The Encina Water Pollution Control Facility (EWPCF) Phase V expansion accommodates the ultimate buildout demand for the Carlsbad Sewer Service Area based on projections made in the 2012 City of Carlsbad Sewer Master Plan; and therefore, currently provides adequate capacity in excess of the performance standard.

Carlsbad's FY 2012-2013 annual daily average dry weather sewer flow was 6.53 million gallons per day (MGD) representing 64% of the City's 10.26 MGD capacity rights. The City's annual daily average sewage flow to the EWPCF for the previous five years is measured as follows:

Fiscal Year	Annual Daily Average Flow
FY 2007-08	7.96 MGD
FY 2008-09	7.11 MGD
FY 2009-10	7.09 MGD
FY 2010-11	7.57 MGD
FY 2011-12	6.92 MGD

C. Buildout Facility Adequacy Analysis

The Encina Water Pollution Control Facility Phase V expansion provides adequate sewer treatment capacity to ensure compliance with the Growth Management wastewater performance standard through buildout of the Carlsbad sewer service area.

The 2012 City of Carlsbad Sewer Master Plan contains an analysis of annual daily average future sewer flow through buildout of the city based on the Carlsbad General Plan land use projections. The analysis indicates that the City's projected ultimate buildout flow is approximately 10.00 MGD. The City has purchased capacity rights to 10.26 MGD in the EWPCF, which ensures adequate wastewater treatment capacity is available to accommodate any unanticipated increase in future sewer flows.

PARKS

A. Performance Standard

3.0 acres of Community Park or Special Use Area per 1,000 population within the Park District[1] must be scheduled for construction within a five year period, or prior to construction of 1,562 dwelling units within the Park District beginning at the time the need is first identified.[2]

B. FY 2012-13 Facility Adequacy Analysis

To date, all quadrants are in compliance with the performance standard.

Quadrant	*Park inventory existing*	*Park acreage required by Performance Standard*
NW	95.4 acres	90.2 acres required
NE	43.5 acres	43.2 acres required
SW	70.2 acres	70.4 acres required
SE	114.9 acres	115.7 acres required
Total	**324.0**	**319.5 acres**

The SE quadrant includes the 32 acre Alga Norte Park which began construction in the summer of 2012. Currently, the performance standard requirement for park acreage exceeds the inventory of existing and scheduled park acreage except for the following two quadrants: SW and SE. However, although short of the acreage required, these quadrants are not out of compliance with the performance standard because neither the time frame nor dwelling unit thresholds have been reached.[2]

Quadrant	Year deficit identified	Units constructed since deficit identified
SW	FY 2012-13	14
SE	FY 2012-13	113

[1] "Park District" = "quadrant". There are four park districts within the city, corresponding to the four quadrants.

[2] The threshold for triggering the construction of a new park is as follows: Once a deficit of park acreage in a quadrant is identified, a new park must be scheduled for construction within the time frame of five years, or before the cumulative construction of 1,562 dwelling units, whichever occurs later. According to City Council Resolution No. 97-435, “scheduled for construction” means that the improvements have been designed, a park site has been selected, and a financing plan for construction of the facility has been approved.

C. Buildout Facility Adequacy Analysis

Based on the current FY 2012-13 CIP list of projects, Veteran's Memorial Park (90 acres, with 22.5 acres applied to each quadrant) is proposed to be constructed prior to buildout. Construction of this community park would result in the projected park inventory for all city quadrants exceeding the projected required acreage at buildout, as shown below:

Quadrant	Buildout Population[3]	*Projected required acreage*[3]	Current Inventory	Proposed park acreage	*Projected Inventory*
NW	35,207	*105.6*	95.4	22.5	*117.9*
NE	19,600	*58.8*	43.5	22.5	*66*
SW	26,431	*79.3*	70.2	22.5	*92.8*
SE	39,508	*118.5*	114.9	22.5	*137.4*
Total	120,746	***362.2***	**324.0**	**90.0**	***414.0***

D. Other Items

Park acreage in this year's report reflects revisions made during a comprehensive review of open space and park acreages. Based on the analysis, various modifications were made to GMP park acreages, including additional acreage in the NW Quadrant added for Pine Avenue Park (due to the completion of Phase I improvements at the Madison Lots) and the removal of Kelly and Hope Elementary Schools from the Joint Use Agreement with C.U.S.D, and refinement of the existing joint use agreement area boundaries. These modifications resulted in more GMP park acreage than was stated in previous reports, including acreage previously not counted for La Costa Heights and La Costa Meadows Elementary Schools.

Figures above for proposed park acreage do not include park projects listed in the CIP as "unfunded" or "partially unfunded" (e.g. Zone 5 Business Park Recreational Facility, Robertson Ranch Park, Cannon Lake Park, etc.). Should alternative funding mechanisms be found, and these parks are built, the additional park acreage would further aid in meeting/exceeding the Growth Management park performance standard.

[3] Reflects SANDAG 2050 Regional Growth Forecast plus adjustments (see pages 10 and 11 of this report) and the updated persons per dwelling number from the 2010 Census (this results in a slightly higher buildout population as compared to previous reports.

DRAINAGE

A. Performance Standard

Drainage facilities must be provided as required by the City concurrent with development.

B. FY 2012-13 Facility Adequacy Analysis

All areas of the City currently meet the growth management drainage performance standard.

The standard for drainage distinguishes it from the other public facility standards because, by its very nature, drainage facility needs are more accurately assessed as specific development plans for individual projects are finalized. Therefore, the drainage performance standard was written to allow the City to require appropriate drainage facilities as development plans are finalized and approved.

Smaller drainage facilities are addressed during the review of individual project proposals. Projects identified are incorporated into the Corrugated Metal Pipe Replacement program, the Northwest Quadrant Storm Drain Program or as individual projects in the capital Improvement Program. The larger 'backbone' drainage facilities are addressed in the City's 2008 Drainage Master Plan. The City's Planned Local Drainage Area (PLDA) fee program was established to assist developers and land owners with the financing of the larger 'backbone' facilities identified in the Drainage Master plan.

There is one area in the City where special conditions are being applied to development projects to ensure compliance with the drainage performance standard. The Agua Hedionda and Calavera Creek channels located east of El Camino Real within the residential community of Rancho Carlsbad were found to be of inadequate size to contain the 100 year flood event. Projects located within LFMP Zones 5, 7, 14, 15, 16, 18 and 24 that drain to the Agua Hedionda or Calavera Creek must comply with the following special conditions to maintain compliance with the drainage performance standard:

1. Financially guarantee construction of the master planned drainage improvements needed to mitigate flooding impacts within the residential community of Rancho Carlsbad.

2. Install onsite drainage improvements to ensure that direct drainage impacts resulting from the proposed development do not exacerbate the potential for downstream flooding of existing development.

The financial guarantee (special condition 1 above) includes payment of the existing PLDA fee and a requirement to enter into an agreement to pay the proposed updated PLDA fee that guarantees financing for all required drainage facilities needed to mitigate the existing flooding condition. Subsequent to the City Council's adoption of the PLDA fee structure and the 2008 Drainage Master Plan, all development projects must pay revised PLDA fees.

C. Buildout Facility Adequacy Analysis

The 2008 Carlsbad Drainage Master Plan proposes the construction of new facilities to accommodate potential storm events. Construction of the proposed Master Drainage Facilities will ensure the Drainage performance standard is maintained through buildout of the city. The 2008 Carlsbad Drainage Master Plan also updated the PLDA program to ensure adequate funds are available to fund construction of needed flood control facilities. The estimated costs for these facilities and the programming of PLDA funds are included in the annual Operating Budget and Capital Improvement Program.

CIRCULATION

A. Performance Standard

No road segment or intersection in the Local Facility Management Zone (LFMZ) nor any road segment or intersection out of the zone which is impacted by development in the zone shall be projected to exceed a service level C during off-peak hours, nor service level D during peak hours. Impacted means where 20% or more of the traffic generated by the local facility management zone will use the road segment or intersection.

B. FY 2012-13 Facility Adequacy Analysis

All intersections and roadway segments currently comply with the Circulation System performance standard.

For purposes of monitoring traffic throughout the City, the capacity of an intersection or roadway segment is compared to the actual volumes measured in the field and reported in terms identified as a "Level of Service (LOS). The definition of "Level of Service" is a quantitative measure of traffic conditions that reflects how restrictive vehicle movements are, or may become. The six levels of traffic service range from A to F. LOS Level A represents the most ideal conditions; Level E is at capacity; and Level F indicates forced flow, or stop and go traffic representing a gridlock condition. The Transportation Research Board Highway Capacity Manual further defines LOS based on specific measurements of traffic volumes and roadway capacities.

The Growth Management Traffic Monitoring Program for 2012 included 27 roadway segments and 49 intersections. Results indicate all roadway segments and intersections meet the Growth Management Circulation performance standard, as follows:

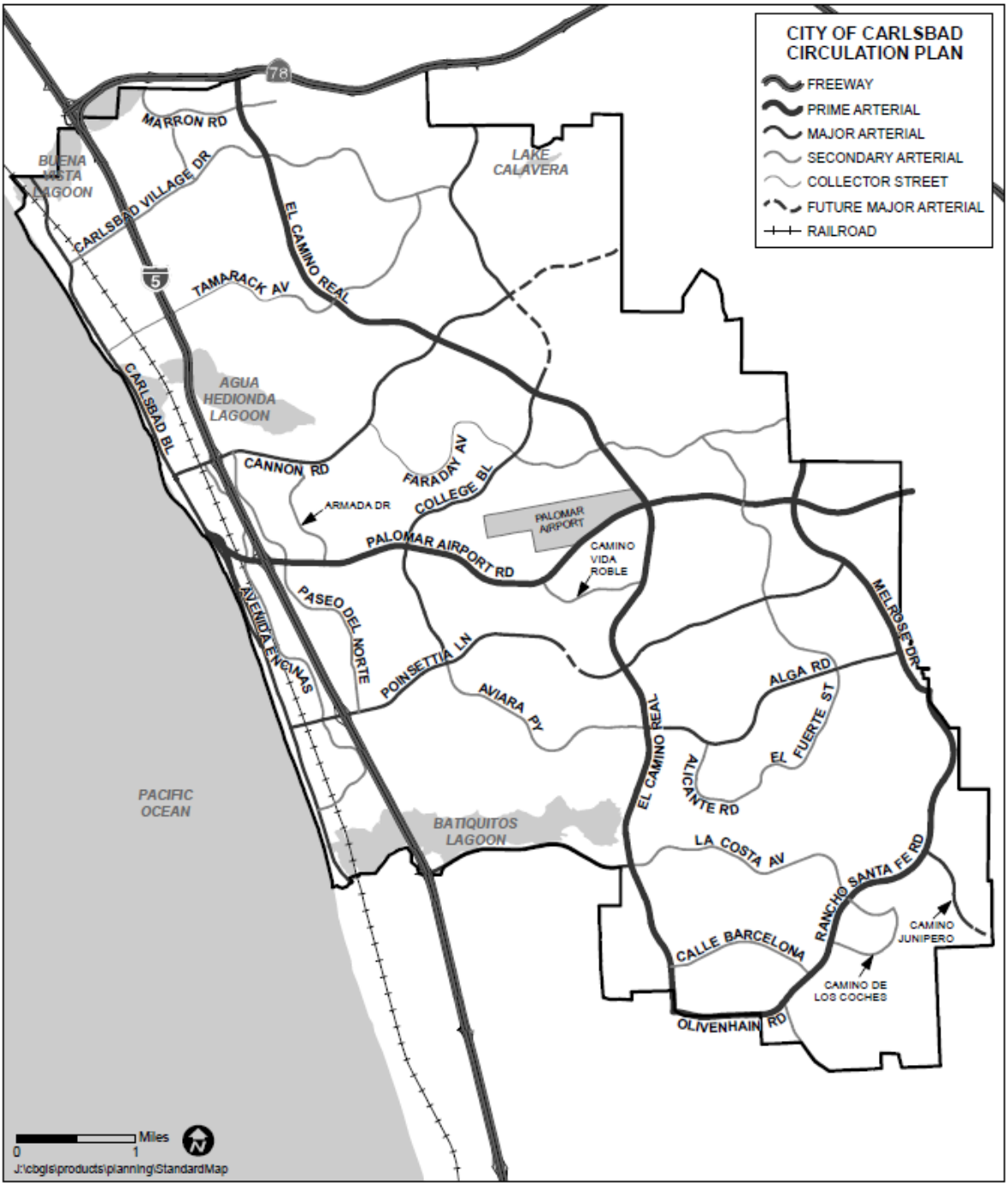
- 25 roadway segments operated at a LOS A and two roadway segments operated at a LOS B during 2012.
- During the AM peak hour, 48 intersections operated at a LOS C or better during 2012.
- During the AM peak hour, the intersection of Palomar Airport Road and Melrose Drive operated at a level of D, which remains consistent with the performance standard.
- During the PM peak hour, 48 intersections operated at a LOS C or better in 2012.
- During the PM peak hour, the intersection of I-5 Northbound and Carlsbad Village Drive operated at a LOS D or better, which remains consistent with the performance standard.

C. Buildout Facility Adequacy Analysis

The Traffic Monitoring Program will continue to be utilized to monitor LOS and verify road and intersection performance and compliance with Growth Management standards at buildout.

In addition, future road segments have been identified in the Circulation Element of the General Plan as necessary to accommodate the buildout of the city (see Figure 6). Traffic forecasts for Carlsbad prepared by SANDAG are based on the buildout of the General Plan, which is based on the Growth Management Plan, and future regional traffic projections. To ensure compliance with the Growth Management Plan, all of the city's LFMPs detail the construction and financing plans for any circulation improvements identified by the traffic forecasts as necessary to accommodate the future buildout. For more information about the funding of circulation improvements, please see the Capital Improvement Program Budget for FY 2012-13.

Figure 6



City of Carlsbad

Circulation Element

FIRE

A. Performance Standard

The number of dwelling units outside a five-minute "travel time" from the nearest fire station shall not exceed 1,500 units.

B. FY 2012-13 Facility Adequacy Analysis

The City's Fire facilities are in compliance with the Growth Management performance standard. There are no more than 1,500 dwelling units outside of a five-minute travel distance from any of the City's six fire stations.

The intent of the GMP standard, as applied to Fire facilities, is to establish the number of stations and their locations, based upon travel distances. At the time the GMP was developed, scientific fire behavior information and recognized best practices supported the position that a response time of five minutes would result in effective fire incident intervention. To determine the most desirable geographic sites for future fire stations, it was necessary to convert the five-minute response time to a measurable distance that could be applied to a future road network scheme. Because the GMP provides no other trigger mechanism for the installation of additional fire stations, it follows that up to 1,500 dwelling units could exist outside the five-minute reach of the closest fire station for an indeterminate length of time without violating the GMP standard. The five-minute travel time measure was selected exclusively as a means of logically positioning emergency response resources throughout the City. Therefore, the standard is applied as a means of measuring compliance with locating fire facilities in accordance with the GMP, not the performance of the Fire Department in meeting service responsibilities. The GMP Fire performance standard is utilized to determine the number of fire stations and their locations, not Fire Department response times.

C. Buildout Facility Adequacy Analysis

At buildout no single fire station district will exceed the established threshold of more than 1,500 units that exist outside of a five minute travel time.

To determine if Fire facilities will be adequate at buildout, the City's Geographic Information System Department (GIS) created a map based upon the following information:

- Existing fire station locations, except Station No. 3, which was sited at its planned future location (just east of the northeast corner of the intersection of Cannon Road and El Camino Real)
- Anticipated future development
- 2.5 mile road distance from each of the 6 Fire Stations (five minute "travel time" equates to road driving distance of 2.5 miles);

- All planned, major roadway arterials; and
- The number of dwelling units projected at buildout that will be located outside of the 2.5 mile road (5 minute) distance from each fire station

The GIS map, based upon the above-noted assumptions, revealed the following findings:

Fire Station Number	Total Number of Dwelling Units Outside of 5 Minutes
1, 3 & 4 (Aggregated)	1135
2	902
5	392
6	1172

As noted above, the GIS map analysis revealed that at build out, the City's existing and planned Fire facilities will meet the GMP performance standards standard (i.e. the total number of dwelling units that will exist outside of a five minute travel time from the nearest fire station will not exceed the threshold of 1,500 units).

OPEN SPACE

A. Performance Standard

Fifteen percent of the total land area in the Local Facility Management Zone (LFMZ) exclusive of environmentally constrained non-developable land must be set aside for permanent open space and must be available concurrent with development.

B. FY 2012-13 Facility Adequacy Analysis

To date, adequate open space has been provided to meet the performance standard.

Open space to meet the performance standard is provided concurrent with approval of development projects. The location of performance standard open space must be indicated during project-specific analysis. It must be in addition to any constrained areas, such as protected wildlife habitat or slopes greater than 40%. At the time the Citywide Facilities and Improvements Plan was adopted (1986), the LFMZ's were divided into: a) those that were already developed and considered in compliance with Growth Management, and b) those that still needed to comply with the open space performance standard.

In 1986, LFMZs 1 through 10, and 16 were already developed and considered to be in compliance with the open space performance standard. Subsequent to the adoption of the CFIP, LFMZs 11 – 15, 17 – 21, and 23 – 24 have provided adequate open space to meet the performance standard concurrent with development.

In April 2013, the LFMP for Zone 25 was adopted along with the Quarry Creek Master Plan, which found that sufficient open space exists in Zone 25 so that all development will comply with the GMP standard through buildout.

LFMZ 22 is still developing and, as future development occurs, open space will be required to meet the performance standard.

C. Buildout Facility Adequacy Analysis

As discussed above, all LFMZs, except for Zone 22, have met the Growth Management open space performance standard. Future projects in LFMZ 22 must provide open space in compliance with the performance standard.

SCHOOLS

A. Performance Standard

School capacity to meet projected enrollment within the Local Facility Management Zone (LFMZ) as determined by the appropriate school district must be provided prior to projected occupancy.

B. FY 2012-13 Facility Adequacy Analysis

Currently, school capacity is in compliance with the Growth Management School performance standard (see below). The City is served by four school districts as listed below:

1. Carlsbad Unified School District

   According to the 2011 Comprehensive Facilities Master Plan Update, sufficient student capacity exists through 2016.

2. San Marcos Unified School District

   Projections for school capacity analysis were not available; however, enrollment projections identify five new dwelling units will be added over the next five years to the SMUSD service area inside Carlsbad, which will result in a negligible increase in student enrollment. Furthermore, it is Carlsbad's practice to require all development projects to pay impact fees to the appropriate school district to ensure adequate facilities are provided.

3. Encinitas Union Elementary School District

   According to demographics data in the Encinitas Union Elementary School District Facilities Master Plan (Nov. 2004), sufficient student capacity exists through 2015.

4. San Dieguito Union High School District

   Based on demographic projections provided by San Dieguito Union High School District, it is estimated that schools serving Carlsbad will have sufficient student capacity through 2018.

C. Buildout Facility Adequacy Analysis

Based on available information, as indicated above, it is estimated that school districts will maintain sufficient capacity through the years 2015 – 2018. School enrollment projections and facility master plans will be periodically updated by the school districts, allowing future capacity analysis to be performed to verify that enrollment can be accommodated.

SEWER COLLECTION SERVICES

A. Performance Standard

Trunk-line capacity to meet demand, as determined by the appropriate sewer districts, must be provided concurrent with development.

B. FY 2012-13 Facility Adequacy Analysis

Sewer improvements are provided on a project by project basis concurrent with development. Currently, the City of Carlsbad's Sewer service area pipelines are in compliance with the Growth Management performance standard. Representatives from the sewer agencies that provide sewer collection systems within the City include: Carlsbad, Leucadia Wastewater District and Vallecitos Water District. Each agency indicates that they currently have adequate conveyance capacity in place to meet Carlsbad's sewer collection demands.

The City of Carlsbad is served by the following four major interceptor systems:

Interceptor System	Sewer Districts Served	Carlsbad Capacity Rights
Vista/Carlsbad Interceptor	City of Carlsbad & City of Vista	Ranges from 3.4% / 0.93 MGD up to 50% / 33.6MGD
Buena Interceptor	City of Carlsbad & Buena Sanitation District	Ranges from 18% / 1.2 MGD up to 35% / 3.0 MGD
Vallecitos Interceptor	City of Carlsbad, Buena Sanitation District & Vallecitos Water District	5 MGD
Occidental Sewer	City of Carlsbad, City of Encinitas & Leucadia Waste Water District	8.5 MGD

Note: MGD = million gallons per day

For both the Vista/Carlsbad Interceptor and the Buena Interceptor, the percentage of Carlsbad capacity rights increases in the downstream reaches of each interceptor system (3.4% in the upstream reaches as they enter the Carlsbad service area and up to 35% or 50% in the downstream reaches for Buena Interceptor and Vista/Carlsbad Interceptor, respectively as they enter the Encina Water Pollution Control Facility).

C. Buildout Facility Adequacy Analysis

The 2012 City of Carlsbad Sewer Master Plan evaluated the sewer infrastructure needs of the Carlsbad Sewer service area and identified those facilities required to accommodate future customers at buildout. The master plan identified the Vista/Carlsbad Interceptor, and Buena Interceptor as requiring improvements to accommodate build-out demand (see below). Sewer trunk main capacities are estimated by comparing wastewater flow projections to the capacity of the sewer system. Using a computer sewer model, the existing and future sewer demands are estimated and compared to the capacity of each trunk sewer pipeline. In addition, annual flow measurement information is also used to determine actual flows in the sewer trunk pipelines.

Vista/Carlsbad Interceptor: A capacity analysis included in the 2012 City of Carlsbad Sewer Master Plan indicates three relatively flat pipeline portions of Reaches VC13, VC14 & VC15. As a result, during peak period flows, the pipeline is flowing full. The FY 2013/14 Capital Improvement Program has identified funds for construction of upgrades to these reaches projected to begin in FY 2013/14. The replacement pipelines are sized based on ultimate flows from both the City of Carlsbad and City of Vista sewer collection systems.

Buena Interceptor. A capacity analysis conducted in 2010 indicates that although the City's wastewater flows are not projected to exceed the capacity rights in the Buena Interceptor, the combined flows of Buena Sanitation District and City of Carlsbad during peak wet weather periods result in capacity restrictions. As a result, Carlsbad is coordinating with Buena Sanitation District to construct a parallel trunk sewer which will allow all flows from Buena Sanitation District to be diverted to the parallel trunk sewer. Once constructed the City of Carlsbad will be the only agency with flows remaining in the existing Buena Interceptor, and this will provide sufficient capacity for Carlsbad during wet weather conditions. Funding for the design and construction of the parallel trunk sewer was appropriated for FY 2013/14 by the City of Vista which operates the Buena Sanitation District, and is now in the final design stage.

WATER DISTRIBUTION SERVICES

A. Performance Standard

Line capacity to meet demand as determined by the appropriate water district must be provided concurrent with development. A minimum of 10-day average storage capacity must be provided prior to any development.

B. FY 2012-13 Facility Adequacy Analysis

Carlsbad's water distribution is provided by three agencies including the Carlsbad Municipal Water District (CMWD) serving 32.32 square miles (82.7 percent of the City), Olivenhain Municipal Water District (OMWD) serving 5.28 square miles (13.5 percent of the City), and Vallecitos Water District (VWD) serving 1.48 square miles (3.8 percent of the City). These districts indicate that they have adequate capacity to meet the Growth Management performance standard.

Water service demand requirements are estimated using a computer model to simulate two water distribution scenarios: 1) maximum day demand plus a fire event; 2) peak hour demand. This computer model was calibrated using actual flow measurements collected in the field to verify it sufficiently represents the actual water system.

Existing and future daily demand and storage requirements for CMWD, which is a subsidiary district of the City of Carlsbad, from the 2012 CMWD Water Master Plan are shown below:

Existing Maximum Day Demand	26.7 MGD
Existing Storage Requirement	39.5 MG
Existing Storage Capacity	50.5 MG excluding Maerkle Dam storage
Future Maximum Daily Demand	39.4 MGD

Based on the water model analysis prepared for the 2012 CMWD Water Master Plan, future pipelines and water system facilities were identified to ensure a complete water system is constructed to accommodate future customers. In addition, funds for the construction of future facilities were included in the FY 2013/14 Capital Improvement Program. Therefore, the future water infrastructure is programmed to be in place at the time of need in order to ensure compliance with the performance standard.

Within the CMWD service area the existing average daily potable water demand peaked in FY 2007/08 at 18.2 MGD. Beginning in fiscal year 2008/09 the average annual demand reduced to 16.5 MGD, in FY 2009/10 it reduced to 14.2MGD, and reduced further in FY 2010/11 to 13.23 MGD. Demand increased in FY 2011/12 to 13.7 MGD, and also in FY 2012/13 to 14.4 MGD The lower water demand, compared to the peak in FY 2007/08, is a result of (1) implementing a new tiered water rate structure to encourage water

conservation, (2) in 2009, a campaign was initiated to reduce customer consumption by the wholesale water agencies, and (3) beginning in 2008 an expansion of CMWD's recycled water system lowered potable water consumption. Water conservation by CMWD customers has resulted in a reduction in per capita consumption.

To meet the 10 day storage requirement, CMWD needs 182 MG of storage capacity based on the historic peak demand. CMWD has a storage capacity of 244 MG which consists of 195 MG of storage capacity at Maerkle Dam and an additional 49 MG of storage capacity in various storage tanks throughout the distribution system. In 2004, the OMWD completed construction of a water treatment facility at the San Diego County Water Authority Emergency Storage Reservoir, which provides the storage necessary to meet the 10 day storage requirement for OMWD. VWD's average day demand was 14.6 MGD with an existing storage capacity of 121.6 MG. Through interagency sharing arrangements VWD can obtain additional water supplies to meet a 10 day restriction on the imported water supply.

C. Buildout Facility Adequacy Analysis

The 2012 CMWD Water Master Plan identifies facilities necessary for build-out conditions within its service area. The 2012 update identified no additional storage tanks are required to meet the future 10 average-day storage requirements because of a reduction in demand from expansion of CMWD's recycled water system.

As proposed land development projects are reviewed by the City, the Water Master Plans from CMWD, OMWD, and VWD are consulted to check pipeline sizes and facility capacities to verify adequacy to support the water needs of the project and city. To comply with water master plan requirements, land development projects may be required to install a master plan water project concurrent with construction of that specific project.